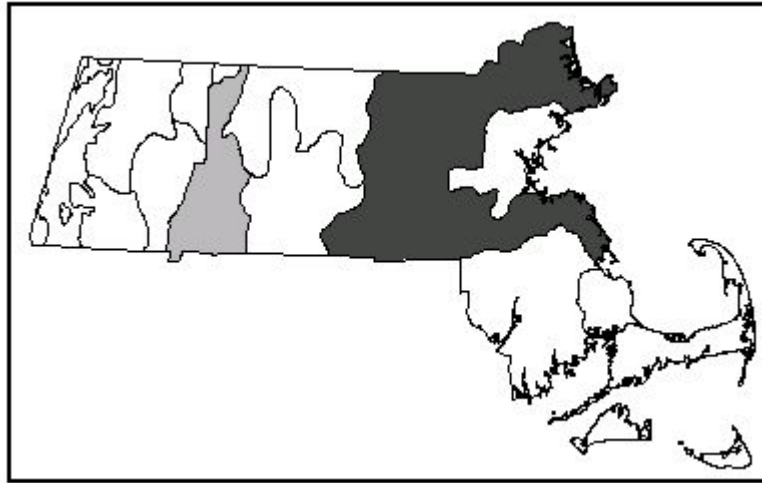


Community Name:
Community ELCODE:
SRANK:

KETTLEHOLE WET MEADOW
CP2A0A2100
S3



Concept:

Graminoid/emergent herbaceous or mixed shrub/herbaceous communities that are restricted to small, usually less than five acres, seasonally inundated, kettle depressions in sandy glacial outwash.

Environmental setting:

Kettlehole wet meadows are a variant of wet meadows that are restricted to glacial kettleholes in sandy outwash soils that have seasonal water level fluctuations. They are seasonally inundated by local runoff and ground water fluctuations, and they typically have no inlet or outlet. For most of the summer, they look like shallow ponds, but by late summer they are covered by emergent vegetation. Soils are typically shallow, mucky peats. Deep peat does not develop due to the seasonal drawdown of water. The hydrology of kettlehole wet meadows is similar to coastal plain ponds. Both are characterized by a series of plant associations occurring along a gradient from the higher, drier margins to the lower, wetter centers.

Vegetation Description:

Sedges and rushes are dominant, and characteristic species include Canada rush (*Juncus canadensis*), pondshore rush (*Juncus pelocarpus*), bayonet rush (*Juncus militaris*), needle spike sedge (*Eleocharis acicularis*), Small's spike sedge (*Eleocharis smallii*), Torrey's bullesedge (*Scirpus torreyi*) and various sedge (*Carex*) species. Shorter plants, like pipewort (*Eriocaulon aquaticum*), are found growing beneath the cover of sedges and rushes. Grasses, such as creeping bent grass (*Agrostis stolonifera*), and some broad-leaved emergents, including arrowhead (*Sagittaria engelmanniana*), nodding bur-marigold (*Bidens cernua*), beggar's ticks (*Bidens tripartita*) and common St. John's wort (*Hypericum perforatum*), also occur. The wettest, muckiest areas have floating-leaved aquatic plants, including white water lily (*Nymphaea odorata*) and mermaid-weed (*Proserpinaca palustris*). When water levels are high, mannagrass (*Glyceria pallida* and *G. acutifolia*) is common, with yellow pond-lily (*Nuphar variegata*) and pickerel-weed (*Pontederia cordata*) occurring in deeper water. Kettlehole wet meadows are typically fringed with shrubs, such as leatherleaf (*Chamaedaphne calyculata*), high bush blueberry (*Vaccinium corymbosum*), buttonbush (*Cephalanthus occidentalis*) and water willow (*Decodon verticillatus*), and with trees such as tupelo (*Nyssa sylvatica*) and red maple (*Acer rubrum*). Common meadow-beauty (*Rhexia virginica*) and various species of sphagnum moss (*Sphagnum* spp.) also grow along the edges. Kettlehole wet meadows are best visited in the late-summer when water levels are down, and the basin is covered by a dense growth of narrow-leaved emergents.

Associations:

No associations have been described in Massachusetts.

**Habitat values for
Associated Fauna:**

Kettlehole wet meadows can function as vernal pool habitat if water remains standing for 2-3 months; these areas provide important amphibian breeding habitat. The sedges, bulrushes and grasses of kettlehole wet meadows provide a food resource for waterfowl and other marsh birds.

Associated rare plants:

SCIRPUS TORREYI

TORREY'S BULLESDGE

- WL

Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife

Associated rare animals:

AMBYSTOMA LATERALE	BLUE-SPOTTED SALAMANDER	SC
AMBYSTOMA OPACUM	MARbled SALAMANDER	T
DESMOCERUS PALLIATUS	ELDERBERRY LONG-HORNED BEETLE	SC
HEMIDACTYLIUM SCUTATUM	FOUR-TOED SALAMANDER	SC
SCAPHIOPUS HOLBROOKII	EASTERN SPADEFOOT	T
SYNAPTOMYS COOPERI	SOUTHERN BOG LEMMING	SC

**Examples with
Public Access:**

There are currently three tracked sites, one in Douglas State Forest in Douglas and two in Minuteman National Park in Concord. More sites undoubtedly exist.

Threats:

Alterations to natural water-level fluctuations. The sites for which we have vegetation data have surprisingly few non-native plant species, and exotics may not currently threaten these communities.

Management needs:

More information is needed on the physical and hydrological processes associated with Kettlehole wet meadows in order to make educated management recommendations. It is known that seasonal water level fluctuations play an important role in the occurrence of the community. Spring high-water levels prevent encroachment of woody shrubs and trees, and late-summer low-water levels allow characteristic narrow-leaved emergents to appear. Any alteration in natural water level fluctuations, such as groundwater withdrawal, would negatively affect the community. Inland Basin Marshes may be prone to burning during low water periods, but the role of fire in community dynamics is not known.

**Synonyms
USNVC/TNC:**

MA [old name]: SNE Inland basin marsh [CP2A3A0000].

ME: Not described.

VT: Not described.

NH: Inland Basin Marsh.

NY: Not described.

CT: Not described.

RI: Not described.

Golet & Larson, 1974: Ungrazed meadow (M-1); grazed meadow (M-2).

Other:

Author: J. Kearsley

Date: 7/21/99